CLAIMS

The invention claimed is:

5 1. A device comprising:

a network interface for coupling to a network; and

a processor coupled with the network interface, in which the processor is adapted to

receive packets in a first node of a network;

10 store some of the received packets in a queue;

retransmit some of the stored packets from the queue;

discard some of the received packets when the queue has filled up to a preset threshold;

determine lengths of respective pluralities of episodes of sequentially

15 discarded packets;

determine a loss length statistic for the first node from at least the determined lengths; and

incorporate the loss length statistic in a routing table.

20 2. The device of claim 1, in which

the loss length statistic is the number of sequentially discarded packets.

3. The device of claim 1, in which

the loss length statistic is an average duration of episodes of sequentially

25 discarded packets.

4. The device of claim 1, in which

the loss length statistic is a variance in a duration of episodes of sequentially

discarded packets.

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5. The device of claim 1, in which

the loss length statistic is a maximum duration of episodes of sequentially

discarded packets.

6.   The device of claim 1, in which the processor is further adapted to:

          compare the loss length statistic to a preset minimum.

7.   The device of claim 1, in which the processor is further adapted to:

5   compute a figure of merit from the loss length statistic for the first

node.

8.   The device of claim 1, in which the processor is further adapted to:

          define bad states that correspond to the discarded packets and good

10   states that correspond to all other received packets;

          determine when there are transitions in the sequentially received

packets between the good states and the bad states; and

              counting numbers of the transitions,

          and in which the lengths are determined from the counted numbers of

15   transitions.

9.   The device of claim 1, in which the processor is further adapted to:

              look up a collateral parameter from a table,

          and in which the loss length statistic is determined also from the collateral

20   parameter.

10.   The device of claim 9, in which

          the collateral parameter is a residual bandwidth.

25   11.   The device of claim 1, in which the processor is further adapted to:

              determine a loss length statistic for a second node about packets

          discarded at the second node.

12.   The device of claim 11, in which the processor is further adapted to:

30   compare the loss length statistic for the second node to that of the first

node.

13.   The device of claim 11, in which the processor is further adapted to:

compare the loss length statistic for the second node to a preset minimum.

14.   The device of claim 11, in which the processor is further adapted to:
            combine the loss length statistic for the second node with the loss length statistic for the first node to determine an aggregate loss length statistic for a first path.

15.   The device of claim 14, in which the processor is further adapted to:
            compare the aggregate loss length statistic to a preset minimum.

16.   The device of claim 14, in which the processor is further adapted to:
            determine an aggregate loss length statistic for a second path.

17.   The device of claim 16, in which the processor is further adapted to:
            compare the aggregate loss length statistic for the second path to that of the first path.

18.   The device of claim 16, in which the processor is further adapted to:
            compare the aggregate loss length statistic for the second path to a preset minimum.

19.   A device comprising:
        means for receiving packets in a first node of a network;
        means for storing some of the received packets in a queue;
        means for retransmitting some of the stored packets from the queue;
        means for discarding some of the received packets when the queue has filled up to a preset threshold;
        means for determining lengths of respective pluralities of episodes of sequentially discarded packets;
        means for determining a loss length statistic for the first node from at least the determined lengths; and
        means for incorporating the loss length statistic in a routing table.

20.	The device of claim 19, in which

the loss length statistic is the number of sequentially discarded packets.

21.	The device of claim 19, in which

the loss length statistic is an average duration of episodes of sequentially discarded packets.

22.	The device of claim 19, in which

the loss length statistic is a variance in a duration of episodes of sequentially discarded packets.

23.	The device of claim 19, in which

the loss length statistic is a maximum duration of episodes of sequentially discarded packets.

24.	The device of claim 19, further comprising:

means for comparing the loss length statistic to a preset minimum.

25.	The device of claim 19, further comprising:

means for computing a figure of merit from the loss length statistic for the first node.

26.	The device of claim 19, further comprising:

means for defining bad states that correspond to the discarded packets and good states that correspond to all other received packets;

means for determining when there are transitions in the sequentially received packets between the good states and the bad states; and

means for counting numbers of the transitions,

and in which the lengths are determined from the counted numbers of transitions.

27.	The device of claim 19, further comprising:

means for looking up a collateral parameter from a table,

and in which the loss length statistic is determined also from the collateral parameter.

28.   The device of claim 27, in which
       the collateral parameter is a residual bandwidth.

29.   The device of claim 19, further comprising:
       means for determining a loss length statistic for a second node about packets discarded at the second node.

30.   The device of claim 29, further comprising:
       means for comparing the loss length statistic for the second node to that of the first node.

31.   The device of claim 29, further comprising:
       means for comparing the loss length statistic for the second node to a preset minimum.

32.   The device of claim 29, further comprising:
       means for combining the loss length statistic for the second node with the loss length statistic for the first node to determine an aggregate loss length statistic for a first path.

33.   The device of claim 32, further comprising:
       means for comparing the aggregate loss length statistic to a preset minimum.

34.   The device of claim 32, further comprising:
       means for determining an aggregate loss length statistic for a second path.

35.   The device of claim 34, further comprising:
       means for comparing the aggregate loss length statistic for the second path to that of the first path.

36.   The device of claim 34, further comprising:

means for comparing the aggregate loss length statistic for the second path to a preset minimum.

37.   An article comprising: a storage medium, the storage medium having instructions stored thereon, in which when the instructions are executed by at least one device, they result in:

      receiving packets in a first node of a network;

      storing some of the received packets in a queue;

      retransmitting some of the stored packets from the queue;

      discarding some of the received packets when the queue has filled up to a preset threshold;

      determining lengths of respective pluralities of episodes of sequentially discarded packets;

      determining a loss length statistic for the first node from at least the determined lengths; and

      incorporating the loss length statistic in a routing table.

38.   The article of claim 37, in which

      the loss length statistic is the number of sequentially discarded packets.

39.   The article of claim 37, in which

      the loss length statistic is an average duration of episodes of sequentially discarded packets.

40.   The article of claim 37, in which

      the loss length statistic is a variance in a duration of episodes of sequentially discarded packets.

41.   The article of claim 37, in which

      the loss length statistic is a maximum duration of episodes of sequentially discarded packets.

42.   The article of claim 37, in which the instructions further result in:

      comparing the loss length statistic to a preset minimum.

43.   The article of claim 37, in which the instructions further result in:

computing a figure of merit from the loss length statistic for the first node.

5   44.   The article of claim 37, in which the instructions further result in:

defining bad states that correspond to the discarded packets and good states that correspond to all other received packets;

determining when there are transitions in the sequentially received packets between the good states and the bad states; and

10   counting numbers of the transitions,

and in which the lengths are determined from the counted numbers of transitions.

45.   The article of claim 37, in which the instructions further result in:

15   looking up a collateral parameter from a table,

and in which the loss length statistic is determined also from the collateral parameter.

46.   The article of claim 45, in which

20   the collateral parameter is a residual bandwidth.

47.   The article of claim 37, in which the instructions further result in:

determining a loss length statistic for a second node about packets discarded at the second node.

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48.   The article of claim 47, in which the instructions further result in:

comparing the loss length statistic for the second node to that of the first node.

49.   The article of claim 47, in which the instructions further result in:

30   comparing the loss length statistic for the second node to a preset minimum.

50.   The article of claim 47, in which the instructions further result in:

combining the loss length statistic for the second node with the loss length statistic for the first node to determine an aggregate loss length statistic for a first path.

5   51.   The article of claim 50, in which the instructions further result in:
comparing the aggregate loss length statistic to a preset minimum.

52.   The article of claim 50, in which the instructions further result in:
determining an aggregate loss length statistic for a second path.

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53.   The article of claim 52, in which the instructions further result in:
comparing the aggregate loss length statistic for the second path to that of the first path.

15   54.   The article of claim 52, in which the instructions further result in:
comparing the aggregate loss length statistic for the second path to a preset minimum.

55.   A method comprising:
20   receiving packets in a first node of a network;
storing some of the received packets in a queue;
retransmitting some of the stored packets from the queue;
discarding some of the received packets when the queue has filled up to a preset threshold;
25   determining lengths of respective pluralities of episodes of sequentially discarded packets;
determining a loss length statistic for the first node from at least the determined lengths; and
incorporating the loss length statistic in a routing table.

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56.   The method of claim 55, in which
the loss length statistic is the number of sequentially discarded packets.

57.   The method of claim 55, in which

the loss length statistic is an average duration of episodes of sequentially discarded packets.

58.   The method of claim 55, in which

5   the loss length statistic is a variance in a duration of episodes of sequentially discarded packets.

59.   The method of claim 55, in which

the loss length statistic is a maximum duration of episodes of sequentially

10   discarded packets.

60.   The method of claim 55, further comprising:

comparing the loss length statistic to a preset minimum.

15   61.   The method of claim 55, further comprising:

computing a figure of merit from the loss length statistic for the first node.

62.   The method of claim 55, further comprising:

defining bad states that correspond to the discarded packets and good states

20   that correspond to all other received packets;

determining when there are transitions in the sequentially received packets

between the good states and the bad states; and

counting numbers of the transitions,

and in which the lengths are determined from the counted numbers of

25   transitions.

63.   The method of claim 55, further comprising:

looking up a collateral parameter from a table,

and in which the loss length statistic is determined also from the collateral

30   parameter.

64.   The method of claim 63, in which

the collateral parameter is a residual bandwidth.

65.   The method of claim 55, further comprising:

determining a loss length statistic for a second node about packets discarded at

the second node.

5   66.   The method of claim 65, further comprising:

comparing the loss length statistic for the second node to that of the first node.

67.   The method of claim 65, further comprising:

comparing the loss length statistic for the second node to a preset minimum.

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68.   The method of claim 65, further comprising:

combining the loss length statistic for the second node with the loss length

statistic for the first node to determine an aggregate loss length statistic for a first

path.

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69.   The method of claim 68, further comprising:

comparing the aggregate loss length statistic to a preset minimum.

70.   The method of claim 68, further comprising:

20   determining an aggregate loss length statistic for a second path.

71.   The method of claim 70, further comprising:

comparing the aggregate loss length statistic for the second path to that of the

first path.

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72.   The method of claim 70, further comprising:

comparing the aggregate loss length statistic for the second path to a preset

minimum.

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